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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,429	11/08/2001	Keiichi Tanaka	0234-0436P	5259

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EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,429

Applicant(s)

TANAKA ET AL. *eb*

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12/03.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-7 and 9-11, drawn to a photocatalyst, classified in class 502, subclass 350.

II. Claim 8, drawn to a method for treating wastewater, classified in class 205, subclass 742+.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed could be used in a materially different process, such as a process for anti-fogging or anti-fouling, or disinfecting a gaseous fluid.

Because these inventions are distinct for the reasons given above, have acquired a separate status in the art as shown by their different classification, and the search required for

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Group I is not required for Group II, restriction for examination purposes as indicated is proper.

3. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 8 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-7 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Mouri et al. US 5,690,922.

Regarding claims 1 and 9, Mouri '922 discloses titanium oxide photocatalyst (abstract) comprising a silicic acid ion

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species supported on the photocatalyst (see column 11, lines 49-51 and 60-64).

Regarding claim 6, Mouri '922 discloses supporting a silicic acid ion species on a photocatalyst according to an ion-exchange method (see column 11, lines 49-51 and 60-64).

Regarding claim 2, Mouri '922 discloses a silicic acid ion species supported according to an ion-exchange method (see column 11, lines 49-51 and 60-64).

Regarding claim 3, Mouri '922 discloses silicon dioxide (see column 11, line 63).

Regarding claims 4-5, Mouri '922 discloses titanium oxide (abstract).

Regarding claim 7, Mouri '922 discloses mixing copper sulfate and titanium sulfate to form Mixture A, then adding aqueous sodium silicate drop-wise, followed by filtration and drying (see Example 1) and producing a silicic acid ion species supported on the photocatalyst (see column 11, lines 49-51 and 60-64).

Regarding claims 10-11, Mouri '922 discloses 5-30% sheath composition covering the core (see column 14, lines 15-26).

6. Claims 1-7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hu et al. US 5,385,753.

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Regarding claims 1 and 9, Hu '753 discloses a photocatalyst comprising a zeolite, which comprises a metal cation (see column 1, lines 62-68).

Regarding claim 6, Hu '753 discloses mixing a zeolite, which comprises a metal cation (see column 1, lines 62-68) with titania (see column 2, lines 15-20).

Regarding claims 2-3, Hu '753 discloses silica (see column 2, lines 1-3).

Regarding claims 4-5, Hu '753 discloses titania (see column 2, lines 15-20).

Regarding claim 7, Hu '753 discloses adding the titanium and zeolite in an agitated slurry dropwise (see Example 1) vacuum filtering, and drying overnight (see Example 2).

7. Claims 1-7 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogata et al. US 6,238,631.

Regarding claims 1 and 9, Ogata '631 discloses a titanium dioxide photocatalyst securely deposited on fine particles (see column 6 lines 52-57) and wherein silica, alumina or zirconium phosphate may then be added (see column 6, lines 60-65).

Regarding claim 6, Ogata '631 discloses coating titanium dioxide onto fine particles and then adding silica, alumina, or zirconium phosphate (see column 6, lines 47-51 and 60-65).

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Regarding claims 2-3, Ogata '631 discloses silica, alumina or zirconium phosphate may then be added (see column 6, lines 60-65).

Regarding claims 4-5, Ogata '631 discloses titanium dioxide (see column 6, lines 40-42).

Regarding claim 7, Ogata '631 discloses coating by spraying or dipping followed by drying (see column 6, lines 47-51).

Response to Arguments

8. Applicant's arguments filed 12/29/03 have been fully considered but they are not persuasive.

It is argued that it appears that the above-rejections... Ogata et al. This is not persuasive because photocatalysts are disclosed (see above).

It is argued that conventionally a metal oxide... for a photocatalyst. This is not persuasive because titanium dioxide photocatalysts are disclosed (see above).

It is argued that certainly, in Mouri et al.'s invention... a divalent metal. This is not persuasive because even the claimed specific "inorganic substance", silicon dioxide, is disclosed (see instant claim 3 and the rejection thereof).

It is argued that Hu et al. teach... dioxide sol. This is not persuasive because even the claimed specific "inorganic

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substance", silica, is disclosed (see claim 3 and rejection thereof).

It is argued that in addition, it is taught by Ogata et al... the porous structure. This again is not persuasive because the claimed inorganic substance providing the charge is disclosed (see above).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0987.

EMJ

January 23, 2004


STANLEY S. SILVERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700